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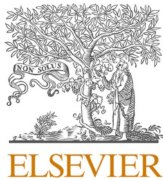

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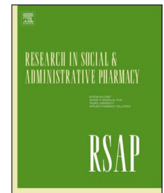

Enablers and barriers to non-dispensing pharmacist integration into the primary health care teams of Aboriginal community-controlled health services

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A R T I C L E I N F O

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A B S T R A C T

Background: The primary health care management of chronic disease affecting Aboriginal and Torres Strait Islander peoples requires healthcare quality and equity demands to be met, and systems that foster better team-based care. Non-dispensing pharmacists (NDPs) integrated within primary healthcare settings can enhance the quality of patient care, although factors that enable or challenge integration within these settings need to be better understood.

Objectives: To investigate enabling factors and barriers influencing integration of NDPs within Aboriginal community-controlled health services delivering primary health care. This was achieved through qualitative evaluation of the Integrating Pharmacists within Aboriginal Community Controlled Health Services (IPAC) Trial exploring the perceptions of NDPs, community pharmacists, healthcare staff, managers, and Aboriginal and Torres Strait Islander patients of these services.

Methods: NDPs were employed across twenty urban, rural, and remote services in three Australian states and provided pre-defined medication-related roles to adult Aboriginal and Torres Strait Islander patients. Perceptions were elicited from online surveys, interviews, and focus groups. Transcripts were thematically analyzed using the constant comparison method to identify, compare, and refine emerging themes.

Results: One hundred and four participants informed the findings, including 24 NDPs, 13 general practitioners, 12 service managers, 10 community pharmacists, 17 health service staff, and 17 patients. Enablers of integration included: personal (previous experience with Aboriginal and Torres Strait Islander peoples, cultural awareness, skills, individual attributes); health service-related (induction programs, Aboriginal Health Worker support, team-building initiatives); and community-related factors (engaged community elders, leaders, cultural mentors, community pharmacy champions). Barriers to NDP integration included a lack of systems supports for patients and staff to adapt to NDP roles, health service factors, travel requirements, a lack of community linkages, and time and budget constraints.

Conclusions: NDP integration within primary health care services has potential to enhance medication-related services to Aboriginal and Torres Strait Islander peoples if enabling factors are supported and health systems and adequate resources facilitate the integration of pharmacists within these settings.

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1. Introduction

Abbreviations

ACCHSs	Aboriginal Community Controlled Health Services
AHW	Aboriginal Health Worker
COREQ	Consolidated Criteria for Reporting Qualitative Research
CTG	Closing the Gap
HMR	Home Medicine Review
HREC	Human Research Ethics Committee
IPAC	Integrating Pharmacists within Aboriginal Community Controlled Health Services (ACCHSs) to Improve Chronic Disease Management
NDP	Non-Dispensing Pharmacist
PBS	Pharmaceutical Benefits Scheme

Aboriginal and Torres Strait Islander peoples in Australia have an expected lifespan 8–9 years shorter than non-Indigenous Australians.[1] This significant disparity is multi-factorial, reflective of higher rates of acute and chronic disease[1] and poorer access to health care services and health infrastructure.[2] In response to historical injustices,[3] the Aboriginal Community Controlled Health Services (ACCHSs) were developed in the 1970s by Aboriginal and Torres Strait Islander peoples, with over 140 of these services now operating across Australia.[4] These services employ Aboriginal and Torres Strait Islander and non-Indigenous health professionals to deliver comprehensive, culturally appropriate primary health care, to "close the gap" in health disparities between these populations.[4]

Aboriginal and Torres Strait Islander peoples also experience reduced medication access through geographic constraints, complex therapeutic regimens due to comorbidities, and financial barriers to health service access.[1,5,6] Poor medication adherence arises from these factors making it common in those with chronic disease leading to higher rates of complications, hospitalizations, and mortality.[7] Despite some initiatives aimed at addressing these barriers, such as Section 100 Remote Area Aboriginal Health Services Program (section 100) and the Closing the Gap (CTG) Pharmaceutical Benefits Scheme (PBS) co-payment measures, improvements to the quality use of medicines are needed.[1] Aboriginal and Torres Strait Islander peoples also find it difficult to form productive relationships with community pharmacists, due to infrequent communication, a lack of culturally appropriate models of care,[8] and limited sharing of patient information across healthcare services.[5,9] In order to optimize chronic disease care, the Australian Productivity Commission,[10] and pharmacists[11] and public enquiries[12] have recommended better ways of utilizing the knowledge and skills of pharmacists, such as in collaborative clinical roles.

One approach is to integrate non-dispensing pharmacists (NDP) within general practices. NDPs are those delivering professional services within a general practice or primary health care model for 'a coordinated, collaborative and integrated approach with an overall goal to improve the quality use of medications of the practice population'.[13] The integration of pharmacists into primary health care settings is expected to improve health outcomes as reported in umbrella reviews,[13] and in New Zealand, the UK, Canada, and USA.[14,15] Introducing NDP roles within primary healthcare teams emerged in response to a growing need for better chronic disease management,[16] and represents a potentially cost-effective method for improving the health of Aboriginal and Torres Strait Islander peoples in Australia.[17]

Several factors may influence the extent of NDP integration within ACCHS settings, such as pharmacist and health service staff awareness of the NDP role, administrative support, or infrastructure issues such as sufficient clinic space.[16,18] In comparison to these NDP roles, conventional Australian 'community pharmacist' roles include medication management and dispensing responsibilities, minor ailment diagnoses and treatment, patient education, and health promotion activities.[19] However, few studies have explored what works to encourage better pharmacist integration into primary healthcare teams.[20] To investigate improvements in health outcomes for Aboriginal and Torres Strait Islander peoples, the *Integrating Pharmacists within Aboriginal Community Controlled Health Services (ACCHSs) to Improve Chronic Disease Management* (IPAC) project was developed in 2017. This project aimed to determine if integrated NDPs lead to improvements in the quality of care received by Aboriginal and Torres Strait Islander peoples with chronic disease.[21] Quality of care outcome measures included clinical endpoints, prescribing quality, medication adherence, Home Medicines Review (HMR)[22] and other service utilization, and patient self-assessed health status that have been explained elsewhere.[21] Factors that influence the extent and ease of NDP integration within these health services form a vital context for understanding expectations in quality of care improvements. This paper describes the enablers and barriers to integration as perceived by NDPs, healthcare staff, and patients as findings from the qualitative evaluation of the IPAC project.

2. Methods

The IPAC project was registered with the Australian New Zealand Clinical Trial Registry (ACTRN12618002002268). Methodology reporting aligns with recommendations in the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist for qualitative research involving interviews and focus groups.[23] The full project protocol that also outlines the governance structure for the study is described elsewhere.[21]

2.1. Study design

The project was a pragmatic, non-randomized, prospective, pre and post quasi-experimental, participatory and community-based study that involved the training and placement of registered NDPs into 20 ACCHS primary healthcare service teams for a period of 15 months. The researchers aimed to evaluate a complex health intervention in real-world settings, utilizing participatory research principles that maximized community engagement and co-design opportunities.[21] The participating sites met established eligibility criteria,[21] were geographically diverse across the states of Victoria, Queensland, and the Northern Territory in Australia, and recognized the diversity of Aboriginal and Torres Strait Islander peoples and models of care across Australia.

2.2. Intervention

There were 26 NDPs employed and trained for the project, by the Pharmaceutical Society of Australia to conduct patient support and health service roles within the cultural context of the ACCHS.[21] Patient support roles included medication reviews (in the home or other settings), medication adherence and appropriateness checks, assessment of medication-related problems, and medication and preventive health advice. Health service roles included education sessions, responding to medication-related queries, reviewing prescribing and mentoring new prescribers, participating in case conferences, undertaking drug utilization reviews, and liaising with community pharmacies and other stakeholders to ensure continuity of care and transitional care to support patients discharged from hospital. NDP roles for this project are described in more detail elsewhere and did not include dispensing activity nor stock control for medication storage facilities.[21] NDPs on average spent three days per week (0.6 FTE) working within their respective ACCHS during the intervention. NDPs provided services to Aboriginal and Torres Strait Islander peoples aged 18 years or older,

who were regular clients of the ACCHSs, and had at least one chronic disease which put them at a high risk of developing medication-related problems (e.g. cardiovascular disease, type 2 diabetes mellitus, chronic kidney disease).

2.3. Participants and data collection

Perceptions were elicited from a range of participant stakeholders including: the integrated NDPs, community pharmacists in towns serviced by the ACCHSs, staff within the ACCHSs including general practitioners, nurses, and service managers, and Aboriginal and Torres Strait Islander patients of these ACCHSs. Qualitative data was collected from these participants between June and August 2019 after the integrated NDPs had spent at least 6 months within the ACCHS. Data collection consisted of: 1) Semi-structured interviews with integrated NDPs (Appendix A), 2) mixed-methods online surveys (via SurveyMonkey) with ACCHS CEOs and service managers (Appendix B), general practitioners, (Appendix C), and community pharmacists (Appendix D), and in-person interviews and focus groups with ACCHS staff (Appendix E) and patients (Appendix F).

One of the NDPs left their ACCHS placement prior to project completion. The remaining 25 integrated NDPs were invited by email to participate, as were 23 community pharmacists, 38 Chief Executive Officers (CEOs) and managers of the ACCHS, and a combined 21 general practitioners and nurses. All ACCHSs were asked to self-nominate for a site visit, each lasting three days. This allowed the research team to collect rich data pertaining to context and to coordinate with ACCHS staff when organizing the interviews and focus groups involving staff and patients. Three of the seven self-nominating ACCHS were selected for a site visit (one in the Northern Territory and two in Queensland), using a purposeful theory-based sampling approach to explore diverse experiences.[24] Sites were selected by the researchers based on their geographical remoteness (one remote, one regional and one urban), and the full-time equivalent workload of their NDPs. Patients of these services were invited to participate by ACCHS staff and the integrated NDPs. All participants gave written informed consent, and none of the authors had a personal or professional relationship with any of the participants at the time of the study.

The mixed-methods online surveys, and interview and focus group guides were developed by the multidisciplinary research team comprising pharmacists, social scientists, general practitioners, and an academic of Aboriginal origin, and were piloted with relevant members of the research team prior to use. The data collection tools explored participant perceptions of the process used to induct the NDPs into the ACCHSs; strategies used to support integration, communication and relationships between staff and patients; the provision of culturally appropriate care; utilization of resources within the ACCHS; and influences on patient health and ACCHSs as a result of NDP integration.

Data were collected by DS (female, social scientist, PhD, non-Indigenous), RP (female, social scientist and public health academic, PhD, non-Indigenous), and PP (female, Aboriginal and Torres Strait Islander Health Academic, Aboriginal). Analysis was also conducted by DS and RP in addition to AD (male, academic pharmacist, PhD, non-Indigenous), and LM (female, general practitioner, MBBS, non-Indigenous). AD, DS, and RP have extensive experience in qualitative research, and mentored LM on qualitative analysis. DS was employed to work on the project and coordinated all activities.

The semi-structured interviews with NDPs were conducted by telephone, videoconferencing, or in-person, depending on participant availability and preferences, and ran for between 45 and 120 min. ACCHS staff and patient interviews, and focus groups ran for between 20 and 60 min. Interviews with ACCHS staff were conducted in private spaces during the site visits. Focus groups with patients were conducted within the ACCHS or at a culturally appropriate location where privacy and confidentiality could be ensured. Patients were encouraged to bring support people to the interviews and focus groups (such as family members and carers) and were offered a $20 gift card as compensation for their time and travel following participation. Patients were not informed of the gift prior to their participation.

2.4. Data analysis

This analysis drew on the research paradigms of pragmatism and critical constructivism,[25] where the research was driven by the project's goals and the resources available for the wider interventional study (pragmatism); whilst all participant voices and worldviews (data) were considered equally important to answer the research questions (critical constructivism).[25] Audio recordings for interviews and focus group discussions were de-identified, transcribed verbatim and imported into NVivo v12 (QSR International Pty Ltd) alongside field notes. Open-ended survey responses were analyzed using conceptual content analysis. NDPs were offered the opportunity to review their transcripts and three participants took up this offer. Transcriptions were thematically analyzed using the constant comparison method, where initial similar themes were developed from data immersion and line-by-line coding and refined through researcher triangulation using an inductive approach. Each transcription was independently coded by one researcher, and emerging themes checked between all researchers at regular intervals to compare and refine themes and resolve discrepancies.

For the analysis, enabling factors were defined as any statement described by participants as perceived to facilitate the roles of NDPs or their impact on the function and capacity of the ACCHS, or enhance their provision of quality care and/or culturally appropriate care, or positively influence the health or other outcomes of Aboriginal or Torres Strait Islander patients. Barriers were defined as statements perceived by participants to inhibit the integration of NDPs within ACCHSs or their roles, or their ability to contribute to the ACCHS and/or the care provided to Aboriginal or Torres Strait Islander patients, or their outcomes. Quotes illustrating the key themes are reported in this paper verbatim to support the discussion, accompanied by unique identifying numbers that match to individual participants.

Ethical approval for the IPAC project was granted by the St Vincent's Hospital Melbourne Human Research Ethics Committee (HREC) (HREC/17/SVHM/280), James Cook University HREC (HREC/H7348), Menzies School of Health Research (HREC/2018–3072), and the Central Australian HREC (HREC/CA-18-3085).

3. Results

3.1. Participants

Overall, the perceptions of 104 participants were recorded. Semi-structured interviews were conducted with 24 of the 25 integrated NDPs (across all 20 ACCHSs), whilst online surveys were completed by 13 general practitioners, 12 service managers, and 10 community pharmacists practicing in the ACCHS. The site visits to the three ACCHSs included four focus groups with 17 health service staff (two to eight participants in each) and three focus groups with 17 patients (five to six participants with each), whilst individual interviews were conducted with eight health service staff, and three patients. Of the 104 participants, the 17 patients were all of Aboriginal and/or Torres Strait Islander origin, as were nine ACCHS staff. None of the NDPs or general practitioners involved in this study were of Aboriginal and/or Torres Strait Islander origin.

3.2. Enablers

A wide range of factors were seen as enabling the NDPs to better integrate within ACCHS settings and to provide high-quality, culturally appropriate care to their Aboriginal and Torres Strait Islander patients. These enablers revolved around three key themes: personal factors such

as the characteristics of the NDP; health service factors related to their place of work; and factors related to the needs of the community whom they served.

3.2.1. Personal factors

Most (18) NDPs had at least 12 months' previous experience in a rural or remote setting managing the healthcare needs of Aboriginal and Torres Strait Islander patients. Some (8) practiced in the same or neighboring towns to where they were raised or had previously practiced as a conventional community pharmacist and had pre-existing relationships with hospitals and local community pharmacies, which helped them to develop strong relationships with the community.

> *"I was very fortunate in that I already have relationships both with the clinic but also with the community here. So, my face is kind of known around town."* (Pharm01)

Significant existing experience in conducting one or more core roles expected of the integrated NDPs was felt to be beneficial. In particular, home medicines review (HMR) experience was cited by half of the NDPs as having provided them with extra knowledge and confidence to conduct medication reviews within the ACCHS.

> *"I've done HMRs for ages and I'm really confident with them … I think the patient centered stuff has been a focus for me … and a big part of what we end up doing"* (Pharm20).

Clinical staff at the health services valued having accredited NDPs who could conduct HMRs, as they believed this enabled the health service to obtain an additional source of income for services as well as being a source of quality recommendations to the general practitioner.

> *"Recommendations were balanced and evidenced based with a thorough understanding of not only the pharmacological reasons behind the changes but a deep understanding of patient factors that influenced their suggested changes"* (GP).

Services referred to the NDP having the right '*organizational fit*' referring to the personal attributes of the NDP that facilitated their integration within the ACCHS. NDPs needed to be culturally responsible, have the ability to develop relationships and build rapport with staff and patients, to be non-judgmental, and resilient.

> *"I think it's about the person that you get in …. [the NDP] who has been with us for quite a while and understands that it's about getting out and talking to people that you get the most work done … It's not a role where you can just sit in the room or see a patient in the home and then not interact with the other staff. It needs to be that workplace culture that you're out talking to the patients, you're being opportunistic having discussions with the GPs etc."* (Manager)

> *"This discussion could be a very different if it was a different pharmacist. So, the success for [name of health service] of this project is at least in part if not marginally about [NDP] and her personality and professionalism"* (Director of Health Services).

> *"I think she obviously got massive support around her from being in community for a long time. She's got ties everywhere. So, she's the ideal person for that job* (Medical Director).

NDPs were seen to perform better when they were adept at translating their IPAC role into practice within the ACCHS. This included being proactive in their role and following-up on key responsibilities, *"like a dog with a bone"* (Medical Director), and in initiating relationships and providing education to both patients and staff.

> *"We had orientation, but we were all heading into different settings and I wasn't quite sure. My role here is much broader than I had expected. I had thought it was just going to be a clinical support role to the GP essentially. Patient education and things like that, but so much more, which is great. I love it because there's the education and clinical [responsibilities] going on here. There's a lot of patient care education … monitoring pathology making sure that's all followed up"* (Pharm02).

3.2.2. Health service factors

Half of the NDPs found their ACCHS to be well-staffed, providing a broad range of services to which they could contribute their knowledge and skills. Their integration into the service was improved when the service itself previously had a pharmacist working with their primary health care team (though with different roles to the IPAC project), and had an understanding of the knowledge base and capabilities of a pharmacist.

Building positive relationships with Aboriginal Health Workers (AHWs) was particularly valued by the NDPs, as they provided support and translation services when needed, and facilitated their integration into both the service and the wider community.

> *"My number one champion would be [Senior AHW] who's amazing, an amazing health worker that probably volunteered in the first instance to help me out. And we sort of hit it off and kind of been mates ever since. We worked very closely together"* (Pharm01).

> *"They [AHW] encouraged me to go to the elders' group when I first started. So that was probably the best thing, because by going to the elders, if they accept you, they will spread the news … So, I think being encouraged to go to that and going with me to introduce me to those key people definitely helps that situation to get into the community*" (Pharm04).

> *"Where I see her [NDP] really shine is basically when [Senior AHW] come on board and was able to take her out into the community and really work in the community … where we can see the gains of what's been happening. Going out with the health workers"* (Nurse).

These key personnel (especially nurses and AHWs) within the ACCHSs and inter-disciplinary collaborations were considered more effective when the general practitioner workforce within the ACCHS was more stable, as it enabled the NDP to undertake their role more effectively.

> *"When I started we had lots of locums as well. We weren't familiar with the patients or medications and whatnot. So [IPAC pharmacist] was actually one of the stable people that was around all the time. She would have seen patients before and she knows them and can tell me about what their medication issues are before I meet them. So that was really helpful. I assume other places don't have that luxury*." (GP)

Collaborations and integration of NDPs into the ACCHS were also found to be improved by team building initiatives instigated by the health service. Examples included the provision of a staff uniform, posters to raise awareness that a NDP was available in the community (which also served as a reminder to foster teamwork within the service), and invitations to social events. These measures were seen as enabling NDP integration and facilitating trust and relationship building.

> *"It makes a big difference having the shirt. You are part of the team, you're one of the good guys*" (Pharm20),

> *"As soon as you have this blue shirt [ACCHS shirt] on, everyone knows that you're a safe person to talk to"* (Pharm11).

> *"The posters were great because they put them up all in the GP rooms and they were a constant reminder to utilize the pharmacist"* (Pharm09),

> *"They [patients] do know our faces from the poster … because they really say 'Oh I saw you on that poster' you know so it's the poster they're great"* (Pharm11).

The capacity to build relationships and trust with the community was strengthened when there were systems in place to allow patients to self-refer to the NDP rather than going through the conventional referral process such as from a general practitioner.

"Building upon existing internal pathways for referral … other means of access such as self-referral was a noticeable improvement for us" (GP).

"I've rang up and asked to see [NDP] and yep, they even booked me in. They said 'oh we'll put you through … yep come in all right, come in and walk in the office or knock on my door and I will see you'" (Patient).

NDPs who had received a comprehensive induction into the health service including discussions on their expected roles within the service, and had received ongoing support, found that this assisted them to feel prepared to integrate within the team.

"I think any job that you walk into if you're not introduced to key people right away it's a bit scary" (Pharm04).

"It was good to have all the aspects of the role explained and how it was to work. And it's good to have the cultural training as well because coming directly to [ACCHS] I wasn't really aware of Aboriginal culture and all the history" (Pharm06).

3.2.3. Community-related factors

NDPs who had received cultural orientation training regarding the community they served and support from local cultural mentors, considered it an invaluable contribution to their positive impact within the community. These orientations were usually organized by the AHWs though it was also the community members and their elders who drove awareness in the community of the presence of the NDP.

"The Aboriginal Health Workers here are incredible and supported me whenever and wherever I needed it … I felt like I wasn't prepared but then I kind of got here and was well supported by the Aboriginal Health Workers and the community" (Pharm02).

Community pharmacists were also seen as key champions in facilitating the integration of NDPs within the health service. Community pharmacists provided NDPs with relevant health information about their specific community, helped to problem solve and liaise with local hospital staff, confirm a patient's medication history, correct medication errors, and supply dose administration aids.

"I do spend a lot of time liaising with our community pharmacy … I chat with the pharmacist there and problem solve with them every day I'm here … I'm kind of the translator between the doctors and other members of the team and the community pharmacy because I speak 'pharmacist' and I speak 'doctor' so I kind of translate in that role a little bit and smooth out any issues" (Pharm01).

"They value it … There's a history between the clinic and the pharmacy and you know they've had their differences. So, they've benefited because they know I'm only a phone call away" (Pharm02).

3.3. Barriers

Participants identified a range of barriers that they felt may have inhibited the integration of NDPs, which also revolved around personal, health service-related, and community-related factors. Many of these barriers reflected the *absence* of the described enabling factors, such as a lack of cultural mentors or an appreciation of the NDP's role, knowledge and capabilities, or lacking systems within the ACCHS to support the pharmacist-initiated services. In addition, the time-limited nature of the project and budget constraints also posed 'project-related' barriers to the integration of NDPs within ACCHSs.

3.3.1. Personal factors

Staff within the ACCHSs reported initially being unsure of the role of the integrated NDPs, which inhibited their integration within the team and resulted in their being underutilized. Even staff with pre-existing working relationships with pharmacists had difficulty overcoming the stereotype that pharmacists just supply medications.

"I don't think she [NDP] was respected with what she was doing … she was forced around and there were a few bad days for her where you know people were pushing her out of rooms and didn't value her work" (Medical Director).

"I think the difficulty with this project has been that it's a very new role for a lot of these clinics and the staff out there had no idea what a pharmacist did" (Pharm10).

"When I first started, one of the GPs who was working here, [who] I've actually known for years … she was one of the ones who said 'what the hell are you doing here, and what do you do?'" (Pharm12).

These issues largely resolved over time as staff became more aware of the knowledge and skills of the pharmacists. This happened more quickly for NDPs that were more proactive in educating the ACCHS staff of their own capabilities.

"I think at the start … they might not have realized what we could do but then after we sort of did a bit of education and then talked to a few people, I think just by word-of-mouth people sort of understood and could say the benefit of having us there and what we could do." (Pharm07).

"[I] felt like an outsider at first, though became an integral part of the team, being thought of first to help with problems, and frequent communication through many modes. We've really integrated into the clinic so the GPs and nurses are comfortable to just walk in the room and say, "I've got this person I'm worried about can you come out and chat to them before they go."' (Pharm11).

However, some NDPs found these issues were ongoing if other staff members felt that their job role was being threatened or intruded upon by the NDP.

"I think that some of the nurses felt I was just being intrusive because they had their system" (Pharm22).

"I think again they were like … 'What are you doing here? Why are you here? Are you stepping on my territory?' So, we didn't get off to a great start, and … I literally sat down one day and was like 'ok, I'm not here to take away your work'." (Pharm02).

3.3.2. Health service factors

A lack of health service system supports for integration also posed a barrier to NDP integration.

"I just feel like the site was just a bit, they weren't prepared for the pharmacist" (Pharm02).

"We had no idea what she was really going to do, and I think we made a lot of it up" (Medical Director).

When services were understaffed, experienced frequent staff turnover, or had internal political issues to deal with, the absence of system supports made NDP integration more difficult. Half of the NDPs reported the ACCHS was understaffed or had to use locum general practitioners.

"*The most challenging thing that was happening … a GP was coming every two weeks, a different GP with different experience and [so they] couldn't follow up with patients there."* (Pharm08)

"I think from day one this health service was under a lot of pressure, the staff were very upset. I think everybody was pretty much preoccupied with the internal politics that were going on. There was one GP who welcomed … me on my first day and she didn't, I don't think she even knew I was arriving that day." (Pharm09)

Some of the health services were spread across multiple buildings or sites, which prevented regular face-to-face contact between the NDP and other health staff making integration more difficult, especially in the absence of an induction into the service.

"The GP clinic is quite small. There's not enough room for us … then the other site that we work from … it's probably about 100 m down the road" (Pharm14).

"I was just like dropped in it. It would have been nice to have a more formal you know, [be] introduced to everyone and their role … I was kind of left to my own devices" (Pharm13).

3.3.3. Community-related factors

Several NDPs reported difficulties performing their role due to significant travel requirements for themselves and other health staff given the vast geographical areas some health services in rural and remote Australia had to cover.

"We were only there [at the health service] really one day a week. The rest of the week we were actually going out working within the communities … you carried all your boxes into Hiluxes [4WD vehicles] and a couple of RNs [registered nurses] and myself … would go out into the community … the time to communicate one on one with people, that was difficult, to have adequate time" (Pharm22).

"I have to get a ferry [from the clinic] over to get to [the town] … a lot of my time is travel … so it's about an hour and a half each way" (Pharm07).

Not being introduced to, or knowing the local community and the key families, also made integration for NDPs more difficult.

"It was kind of a learning process in the beginning about the patients trying to memorize names … knowing the families, which was a big part for me to learn, to understand that this family has all these members. That was another challenge … the local knowledge would have helped with that" (Pharm08).

NDPs often struggled with patients missing appointments as they would sometimes not attend the health service or give warning that they had to miss appointments. Language barriers also inhibited the NDPs ability to provide medication-related services.

"I think one day I had like five [patients] booked in and not one turned up. But it happens in the allied health [clinic] as well" (Pharm12).

"She [NDP] would try to get people while they're here because it's quite hard … It's just the nature of our clinic we get a lot of DNAs [did not attend]" (Nurse).

"There was no Aboriginal Health Worker. Nobody in the health service could speak more than a few words of the language" (Pharm22).

3.3.4. Project-related factors

Barriers were also noted to be related to the time-limited nature of the project and budget constraints, which meant that some NDPs were only appointed in a part-time capacity. Whilst this prolonged the time it took for NDPs to integrate within the team, once NDPs were established, their potential loss to the health service was deeply felt.

"I was seen as an external person, not as an employee. [I] wasn't utilized well due to not being full time and being seen as external" (Pharm08).

"Health promotion days if they had them on the days I'm here I'll get involved in that … it's just a lot of stuff happens on days when I am not here" (Pharm12).

"It hasn't scared patients but there's a lot of them have gone 'what do you mean [you will go in] November?'" (Pharm02).

"This [annoys] (expletive) me you know … you get a program and it works, but bugger me dead if they don't pull the plug on it" (Patient).

"My concern with these kinds of projects is that they are funded for a specific length of time and it's almost like they're funded with the plan that they're not going to work, because there's no plan for ongoing funding … we've already identified that we can't function as an AMS [Aboriginal Medical Service] without a pharmacist … we then have to try and find money to continue with that work" (Director of Health Services).

4. Discussion

The IPAC project was the first national initiative in Australia to embed NDPs within ACCHSs in response to an Aboriginal community-driven need to enhance the delivery of a culturally appropriate, person-centered healthcare experience for Aboriginal and Torres Strait Islander peoples.[21] Enhancing enabling factors whilst minimizing the impact of barriers to NDP integration is essential to optimize team-based efforts towards healthcare quality improvements for Aboriginal peoples and Torres Strait Islanders. The provision of improved medication-related services is critical for this population due to their elevated rates of chronic illness and poorer access to primary health care.[1,6] Integrating NDPs within ACCHSs and their primary healthcare teams aims to ensure better patient access to pharmacist skills, given that their integration within primary healthcare settings is known to improve patient outcomes and the quality of care in other settings.[13]

This qualitative analysis of the IPAC project found that the ease and practicality of NDP integration into ACCHSs was influenced by several factors related to the individual NDPs and the ACCHS. The personal characteristics of NDPs played an important role in their perceived capacity to integrate into the ACCHS and positively influence outcomes for Aboriginal and Torres Strait Islander peoples. Extraversion, openness to experience, and conscientiousness are established traits of leadership, and were similarly important for NDPs in this study.[26] Their ability to opportunistically engage with staff and with patients, and to be adaptable to different contexts (having the right 'organizational fit') were key personal characteristics. This was not surprising given the diverse clinical role expected of NDPs within geographically diverse settings.[21] Previous pharmacist experience working with Aboriginal peoples and communities of Aboriginal origin was also an asset, as were accreditation and skills for the conduct of home medicines reviews. None of the NDPs were themselves of Aboriginal and/or Torres Strait Islander origin. However, any future emphasis on integrating NDPs who are of such origin would be expected to further improve communication and the continuity of care of patients.[27]

The degree of preparation undertaken by the ACCHS also influenced the success of NDP integration. Health services achieved better teamwork with the NDP if they were able to make the pharmacist feel welcome (through a comprehensive induction), and feel like a part of the healthcare team (such as through the provision of a uniform, physical co-location with other health staff in the ACCHSs, and/or use of posters containing their photograph). AHWs working closely with NDPs can also champion the role of the NDP as these staff were particularly important in facilitating pharmacist integration. A relationship between NDPs and existing community pharmacists was also seen as an important enabling factor for NDP integration and for optimizing patient outcomes.

Advertising the presence and expertise of the NDPs through simple posters and newsletters, invitations to social events, and provision of uniforms that matched other ACCHS staff, helped members of the community to identify the NDP and assisted the NDP to feel like part of the team rather than an external health professional. The co-location of NDPs within these ACCHSs, as opposed to within the 'conventional' community pharmacy setting (or in separate buildings to other ACCHS staff as indicated by some NDPs in this study), facilitated integration of medication-related service provision. This may have been mediated by access to electronic health records and a multidisciplinary healthcare team for patient assessments, administrative support, and clinical and educational services provided directly to patients and other healthcare staff, as has been reported elsewhere.[28] Other systematic supports for

integration such as program guidelines, job descriptions, and other promotional material may help to further induct NDPs within the ACCHSs just like other Australian programs that aim to induct general practitioner registrars.[29]

These enablers to workforce integration are well known for other health disciplines. Cultural competency and experience practicing in rural and remote settings is known to improve satisfaction with care and health outcomes,[30] as does an appropriate induction to the health service,[31] and an orientation to the local community culture and their Elders.[9] Building trust and being recognized by the community is important for positive health outcomes[32] and is more likely to occur when health professionals have received cultural awareness training, have a local cultural mentor, and can demonstrate their capacity to provide culturally appropriate care for Aboriginal and Torres Strait Islander peoples.[33]

However, health care services and staff also need to be prepared to adapt to new primary healthcare service roles such as NDPs. In some ACCHSs, staff were initially unsure of the skillset and role of the NDP. Many of the ACCHSs in this study had no previous experience working directly with pharmacists and therefore had not had the opportunity to consider their role, particularly that of NDPs, in healthcare delivery. Other studies from Australia and New Zealand have reported that GPs lack an understanding of the role of NDPs,[34–36] with low rates of patient referral to pharmacists.[19,36,37] As healthcare service staff become aware of pharmacists' capabilities, and as professional rapport, relationships and trust grows, this barrier to better teamwork is able to be overcome.[36,38] Pharmacists themselves must also understand their non-dispensing role to ensure their expectations and competencies match what is required within the specific service.[19] Despite these efforts, certain barriers to integrate NDPs will remain, particularly in rural and remote primary healthcare settings. Travel time, the distance required to interact with patients, a lack of information technology infrastructure, and high staff turnover in ACCHS settings have been longstanding barriers to the continuity of care, and are issues not specific to NDPs.

The community-based participatory and pragmatic research design is a strength of this study suggesting greater transferability of the findings to ACCHSs more generally, as well as other primary healthcare settings relevant to marginalized populations. We are confident our findings are trustworthy.[39] Qualitative data collection methods ensured a prolonged engagement with participants (over several days) to develop familiarity with service settings and the context. Opportunities for patient interviews on-site at the ACCHS (in the presence of support persons) were utilized to build trust for rich data collection. An Aboriginal academic co-facilitated the focus group discussions and was present during the patient interviews and focus groups, which is likely to have minimized any discomfort some participants may have felt about disclosing their experiences with the NDPs.

Perceptions were gathered from a range of key stakeholders across three states in Australia, including almost all of the pharmacists integrated within ACCHSs, but also healthcare staff and managers, community pharmacists, and patients receiving care. Qualitative data analysis was also conducted by the same research team across all multiple sources of data to ensure consistency, whilst also utilizing researchers with varied skills and multiple researcher involvement in coding, analysis, and interpretation for investigator triangulation. Collecting data from several different sites, in different geographical locations, and from different participants aimed to ensure data triangulation.

Survey tools were adapted so that elements relevant to enablers and barriers could be elicited from participants and multiple methods of data collection were used to ensure method triangulation. Member checks were conducted by providing pharmacist participants with transcripts to ensure correct interpretations. There were occasional transcription omissions due to poor internet connectivity that affected the recording quality of interviews in remote sites (conducted by videoconferencing), though these were largely corrected and considered not significant enough to affect thematic coding.

The time-limited nature of the project impacted on NDP placement, and their tenure terminated upon completion of the project. Currently, there are no viable funding sources for the sustainable, continuous employment of a NDP within ACCHSs. The use of Workforce Incentive Program (WIP)[40] funding for NDP services would require ACCHSs to displace clinical staff already funded under this stream such as AHWs or the practice nurse - something ACCHSs are not able to do. The Indigenous Health Services Pharmacy Support Program provides less support for NDP-type services than the WIP with most funds expended by ACCHSs for patient dose-administration aids.[41] Moreover, NDPs are not permitted to provide rebates for their services under Medicare, and therefore cannot supplement the revenue of ACCHSs.

The qualitative analysis of this project has provided rich descriptions of participant perspectives that support the credibility and transferability of findings, especially to other ACCHS settings. Future reports will describe clinical and other endpoints associated with NDP integration within ACCHSs.[21] The strong positive perceptions of patients and ACCHS staff regarding the NDP role in chronic disease care, highlights the importance of factors that facilitate their integration within this clinical setting to benefit this patient population. Funding streams to support the integration of NDPs within ACCHSs need urgent expansion.[10 11]

5. Conclusions

Ensuring that Aboriginal and Torres Strait Islander peoples receive quality primary healthcare to meet equity demands requires access to multidisciplinary teams that include pharmacists. Pharmacists can be embedded within primary health care teams to deliver non-dispensing medication-related services such as direct patient care and health service supports in settings specific to Aboriginal and Torres Strait Islander peoples such as Aboriginal Community-Controlled Health Services. In this study, individual pharmacist, health service, and community factors influenced the effectiveness of NDP integration within services and the utilization of their services. NDPs can be more effectively utilized if services and existing staff (especially AHWs) are supported to integrate the pharmacist within their service, there is role clarity, and the capabilities of pharmacists are understood by healthcare staff and patients. Pharmacists can be better prepared if they receive appropriate induction, including cultural training and orientation to the health service and the local community. This study was the first to explore factors that influence NDP integration within Aboriginal and Torres Strait Islander healthcare settings so as to enhance the quality use of medicines by an underserved population with a high burden of chronic disease. Further research is also needed on ways to improve awareness of the skills and capabilities of NDPs by other health professionals.

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Author statement

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Declaration of competing interest

None.

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Appendix A. Supplementary data

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